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ABSTRACT

A study was conducted to determine if students from low socioeconomic environments have lower academic achievement compared to the academic achievement of students from higher socioeconomic environments. The sample consisted of 66 6th-grade science students at Travis Middle School, Temple, Texas. The students were divided into a low-income group and a nonlow-income group. Midterm and final grade averages were determined for each group. Data were entered into a Statworks program on a Macintosh computer and t-tests produced. When the t-tests were analyzed, the significance of the relationship between academic achievement and socioeconomic environment was apparent. Results indicate that "p" was 0.011 for the midterm and 0.000 for the final semester grade. The null hypothesis was rejected on the evidence that there was a statistically significant difference between the academic achievement of students from low socioeconomic environments compared to that of students from higher socioeconomic environments. Three appendixes contain the study cover letter and questionnaire for teachers, a table of raw data, and three tables of results. (Contains two figures, two text tables, four appendix tables, and seven references.) (SLD)

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ED 402 380

THE EFFECTS OF A LOW SOCIOECONOMIC ENVIRONMENT ON A STUDENT'S ACADEMIC ACHIEVEMENT

by

Kim Kruse

U.S. DEPARTMENT OF EDUCATION
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ABSTRACT

The Effects of a Low Socioeconomic Environment

On a Student's Academic Achievement

by

Kim Kruse

A study was conducted to determine if students from low socioeconomic environments have a lower academic achievement compared to the academic achievement of students from non-low socioeconomic environments. The sample included sixth grade science students at Travis Middle School in Temple, Texas. The students were divided into two groups: low income students and non-low income students. In order to assess academic achievement, the mid-term and final grade averages were recorded from both groups. The data were entered into a Statworks program on a Macintosh computer and t tests were produced. Once the t tests were analyzed the significance between socioeconomic environment and academic achievement was evident. The results indicated that p was equal to 0.011 for the mid-term semester and p was equal to 0.000 for the final semester. The null hypothesis was rejected on the evidence that there was a statistically significant difference between the academic achievement of students from low socioeconomic environments comapared to the academic achievement of students from non-low socioeconomic environments.

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CHAPTER I

INTRODUCTION

General Introduction

Krasner believes that children who are raised in low socioeconomic environments struggle in academic achievement, and the consequences are long term (Krasner, 1992, p.2). Others believe that despite the poor living conditions, children can exhibit a high range of outstanding academic achievement in school. Many believe if a student has parental support, educated teachers, and remedial services at their school, they can be successful.

Statement of The Problem

Many believe students raised in low socioeconomic environments have a more difficult time succeeding academically in school.

Purpose

The purpose of this study is to determine if low income students are lower achievers than non-low income students.

Importance of The Study

The importance of the study is to determine if students who come from a low socioeconomic backgound perform at a lower academic level compared to those students who come from a non-low socioeconomic background. If they do, community intervention strategies can be developed and implemented into the school's curriculum.

Definition of Terms

1. Socioeconomic background/environment. Students who qualify for free or reduced lunch. Students qualify for this program based on their parent's income and the number of people living in the home.

2. Title I. Programs in schools which are federally funded. This program is intended to supplement the basic instruction of low-achieving students typically in the areas of reading and math in low income schools.

Null Hypothesis

There is no significant difference in academic achievement between students from low income environments and students from non-low income environments.

Limitations and Delimitations

This study is limited to Temple Independent School District (T.I.S.D.) in Temple, Texas. It is delimited to sixth grade science students at Travis Middle School during the 1995-1996 school year.

Assumptions

1. The teacher's attitude and behavior is consistent with both groups.

2. The students are representative of other sixth grade science students.

3. The teacher is representative of other sixth grade teachers.

CHAPTER II

REVIEW OF LITERATURE

Children of Poverty

Despite the fact that counteracting educational programs have existed in public schools, the achievement gap between middle- and lower-class students still exists today (Yellin & Koetting, 1991, p.14). Poverty is the key to low academic achievement in elementary, junior high, and high school. Poverty also plays a major role in the school dropout problem (Deschamps, 1992, p.20). Title I of the Improvement Act recognized from its inception in 1965 that the incidence of low-achieving students is much greater in schools that have a high enrollment of students from low socioeconomic households than schools who have a small percent of poor students ("Statement of the Independent Review Panel", 1993, p.32).

Predicting Child Outcomes

In a study by Ramey and McPhee, Krasner reports they found associated with low socioeconomic environments are child and family-related risk factors which threaten normal development and contribute to low academic achievement. In a study by Wegner, Krasner reported that children living in poverty can succeed in school. There are children in society who manage to achieve academically regardless of their environment (Krasner, 1992, p.3).

Some researchers have recognized that risk factors alone fail to account for a range of child outcomes, and that

there are positive influences in a negative environment. It remains unclear as to how environmental risk and protective factors are combined and associated with academic achievement. In studies conducted by Keogh, Rutten, and Werner, Krasner reports they found that researchers can't come to a consensus as to whether a risk condition is a result of an accumulation or an interaction of risk factors (Krasner, 1992, p.4). Krasner concluded in a study by Keogh that there are researchers who maintain that identifying the most powerful risk factor is the most accurate model to use in predicting child outcomes Krasner, 1992, p.4).

Researchers are moving away from a deficit model of child development to predict student achievement, and they are moving towards a model that acknowledges positive contributors in the child's environment. There are problems in the accuracy of past and present models of risk in predicting student achievement. Risk models are reliable for making long term predictions for groups of children, but these models are not reliable in making predictions for individual students (Krasner, 1992, p.4).

Early Education Study

A study was conducted on the effects of early education on low income preschooler's academic achievement and intellectual development. A research study was conducted at the University of North Carolina at Chapel Hill. The study was performed on a group of infants who came from low

income households. The participants were chosen at infancy, and the study lasted until age 15. The study dealt with implementing a special early intervention program in the lives of each participant.

The study found that the early educational program raised children's test performance 16.5 IQ points at the age of three and left a four point IQ improvement at age 15. The students' scores improved in reading and math. In addition, the need for special education classes and retention was reduced with this group of children (Schroeder, 1993, p.72).

The Importance of Literacy

Literacy plays a different role in the lower-class household as compared to the middle- and upper-class homes. In the middle- and upper-class households, students are more likely to be exposed to the beauty and potency of print through books, newspapers, and magazines. These are not only sources of reading material, but a stimulus for communication among the family members. Writing can also be found in these homes through personal notes, letters, applications, and financial matters. Students from lower-class homes do not have the same type of exposure to literacy. Television, more so than print, prevails in these homes. Research has shown that poor students are more likely to be labeled learning disabled and placed in the lowest group at school. This is due to the fact that these students have not had the opportunity to be exposed to

literacy in their homes (Yellin & Koetting, 1991, p. 14).

Educators have recognized this problem and are taking a different approach to literacy instruction in their classrooms to meet the needs of the lower-class students. Schools are expanding the whole notion of literacy to teach students that ideas can be generated from reading and writing. They are also exposing their students to all types of print. Finally, students are learning to be active participants in the literacy-learning process (Yellin & Koetting, 1991, p.16).

Title I and Schoolwide Projects

Since 1981 Title I of the Education Consolidation and Improvement Act has provided school districts with supplementary services funds for more than five million low income students across the United States. Funds are distributed to the schools according to the number of low income students attending that school. Schools use the pull-out program which isolates the Title I students from the whole group.

According to the Interim Report of the present National Assessment, the average achievement of students in high poverty schools is lower than the achievement of Title I students in low poverty schools. Title I recognized that there are more low-achieving students in schools with high concentrations of low income students.

Under current legislation, the Hawkins Stafford School

Improvement Amendments of 1988, schools who have at least 75 percent of low income students may use Title I funds to create schoolwide projects (Burnett, 1993, p.3). Schoolwide projects are used to strengthen the educational experience throughout the entire school rather than implementing a discrete remedial program. This program allows students who don't qualify for Title I assistance the opportunity of schoolwide projects. The following are a few examples of schoolwide projects: informal process of student selection, formal staff development programs, family-oriented programs, home visits, early childhood education, and extended-year programs (Burnett, 1993, p.3).

School Drop Out

In a study done by Hahn, Deschamps reports that poverty is the key to the dropout problem in the United States. In another study by Gage, Deschamps discovered that poverty stands out as the most obvious of all the factors associated with students dropping out of school. In a HS&B Survey conducted by Peng and Takai, Deschamps reported that the main reason students dropped out of school was because of economic reasons. These students were from low income households and were forced to seek employment to help their families financially (Deschamps, 1992, p.34).

Statistics in 1993 show that 13.5 percent of persons below the poverty level have less than a ninth grade

education. Twenty-five percent of persons below the poverty level did not graduate from high school. Only eight percent of persons below the poverty level have the education and financial resources to attend college. Out of the eight percent only 2.3 percent received their Bachelor's degree (Statistical Abstract of The United States, 1995, p.296).

CHAPTER III

METHODS AND PROCEDURES

A research study was conducted on sixth grade science students at Travis Middle School in Temple, Texas for the 1995-1996 academic school year in order to determine the effect of low socioeconomic background on academic achievement.

The sample population was drawn from students who came from low income households and non-low income households. The sample consisted of both males and females from various ethnic backgrounds. The students included in the sample population were students who were not labeled as special education or gifted and talented. These students did not receive any special academic services during the 1995-1996 school year.

The research study used data collected from the students mid-term and final grade in science. The data were entered into a Macintosh computer which used the Statworks program. A significant difference between the academic achievement of low income students as compared to the academic achievement of non-low income students was determined by running t tests from the data that was collected. The four categories used from the data to run t tests were low income mid-term grade, low income final grade, non-low income mid-term grade, and non-low income final grade. The minimum level of probability to reject the null hypothesis was set at P less than .05 level of significance.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The results show that the low income students had lower percentages compared to the non-low income students on both the mid-term and the final semester averages. The low income students had a 24.15 percent at mid-term and a 23.12 percent for the end of the year average. The non-low income students were at a 26.14 percent at mid-term and a 26.58 percent for the final semester average. Figure 1 gives a visual representation of this information.

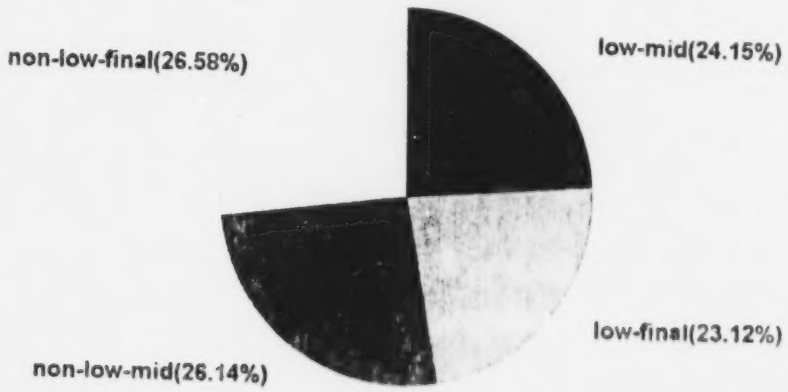

Figure 1. Frequency Data Regarding Percentages of Mid-term and Final Grades For Low Income and Non-low Income Students

Mean scores were calculated from the data, and the results show that the low income students had a mean of 80.11 at mid-term and a mean of 76.70 at the end of the year. This group of students' grades dropped 3.41 points in less than five months. On the other hand, the non-low

income students had a mean of 86.72 at mid-term and a mean of 88.17 for the final semester. This group of students increased their mean by 1.45 points. Figure 2 illustrates the difference between the mean scores for the low income and non-low income students on two separate occasions.

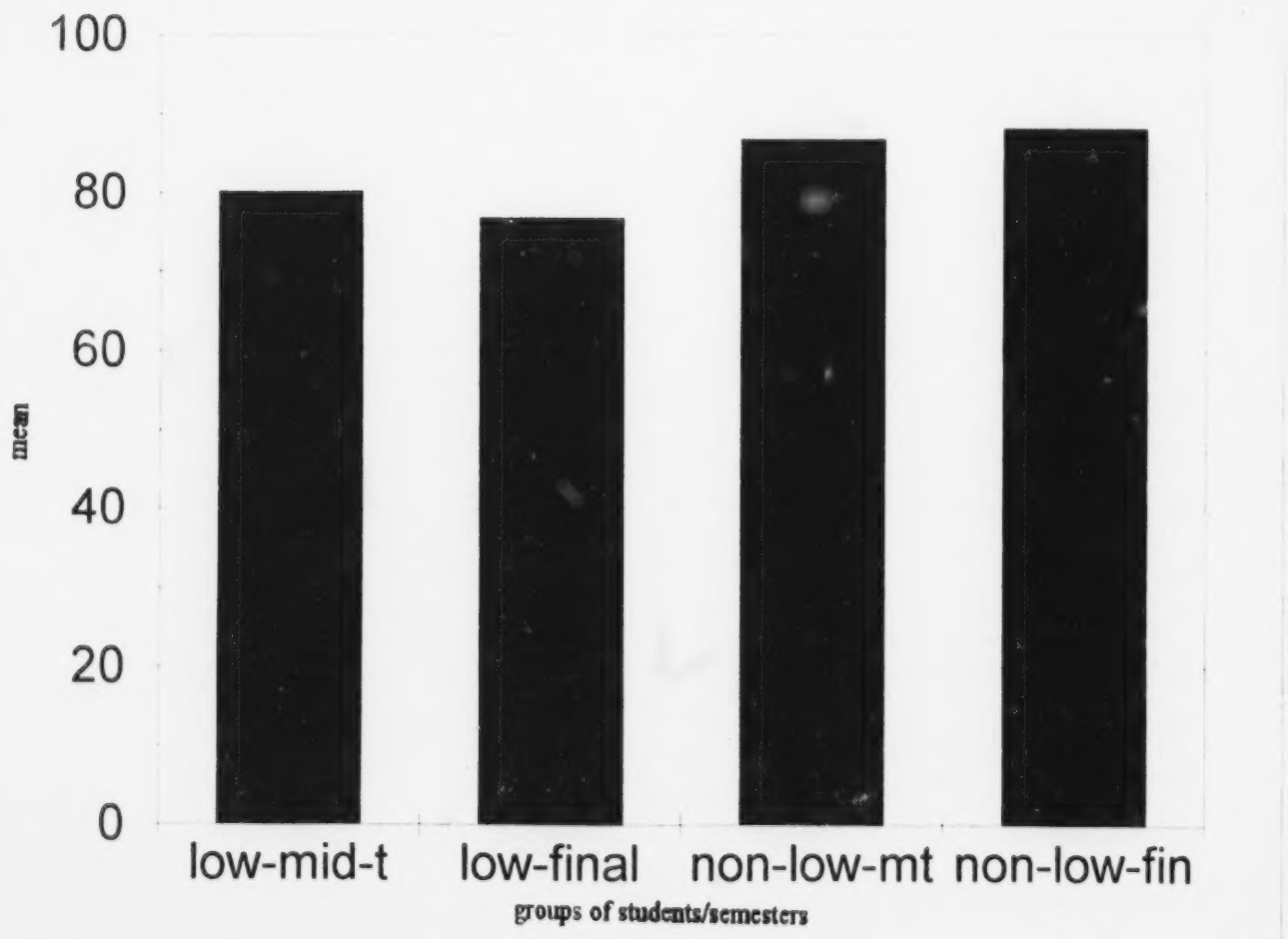

Figure 2. **Comparison of Mid-term and Final Means For Low and Non-low Income Students**

The null hypothesis was addressed by running t tests for both groups of students for the mid-term and the final semesters. The level of significance was set at p less than .05. The t tests revealed that the level of significance for both the low income students and the non-low income students were p less than .05. The level of significance for the mid-term semester was p was equal to 0.011 or less and p was equal to 0.000 for the final semester. The results did achieve statistical significance. The t statistic for the mid-term semester was -2.61. The t statistic for the final semester was -4.00. The results are displayed in Tables 1 and 2.

Table 1. Mid-term Grade Average of Low and Non-low Income Students - t tests

Data File: 6TH GR SCI ACHIEVEMENT STUDY

Independent Samples...

Variable:	LOW-MID T	NON-LOW-MID
Mean:	80.11	86.72
Std. Deviation:	11.42	8.45
Observations:	37	29

t-statistic:	-2.61	Hypothesis:
Degrees of Freedom:	64	Ho: $\mu 1 = \mu 2$
Significance:	0.011	Ha: $\mu 1 \neq \mu 2$

Table 2. Final Grade Average of Low and Non-low Income

Students - t tests

Data File: 6TH GR SCI ACHIEVEMENT STUDY

Independent Samples...

Variable:	LOW-FINAL	NON-LOW-FIN
Mean:	76.70	88.17
Std. Deviation:	14.04	7.23
Observations:	37	29

t-statistic:	-4.00	Hypothesis:
Degrees of Freedom:	64	Ho: $\mu 1 = \mu 2$
Significance:	0.000	Ha: $\mu 1 \neq \mu 2$

CHAPTER V

SUMMARY, CONCLUSION,AND RECOMMENDATIONS

Summary

Previous research cited in the review of literature states that there is an achievement gap between low income and non-low income students (Yellin & Koetting, 1991, p.14). In a 1986 study conducted by Ramey and McPhee, Krasner reported that there are child and family-related risk factors when living in a low socioeconomic environment which threaten normal development and contribute to low academic achievement (Krasner, 1992, p.3). In another study conducted by Gage, Deschamps reported that poverty is the key factor to students dropping out of school (Deschamps, 1992, p.34).

Science mid-term and final semester averages of low income and non-low income students were used in this study to determine if there is a difference in the academic achievement between these two groups of students. Rejecting or accepting the null hypothesis was determined by running t tests on a Macintosh computer using the Statworks program. The level of significance was set at p less than .05. The t tests' results yielded p was equal to 0.011 or less on the mid-term semester averages and p was equal to 0.000 on the final semester averages.

The analysis of the study indicated that the higher average percentages were found with the non-low income students. The results of this study show that the mid-term and final semester averages for the non-low income students were higher than the mid-term and final semester averages

for the low income students. The mid-term and final mean scores for the non-low income students were 86.72 and 88.17. The mean scores for the low income students were 76.70 and 80.11.

Conclusion

The null hypothesis that there is no significant difference in academic achievement between students from low income environments and students from non-low income environments is rejected based on the evidence provided from t tests. The level of significance for both the mid-term and the final semester averages were below the p less than .05 level of significance.

Recommendations

Recommendations for replication of this study or further study on the effect of low socioeconomic environments on academic achievement include the following:

1. A larger sampling would be necessary in order to make generalizations to a larger population.

2. Academic achievement should not be limited to science averages. Academic achievement could be measured by including all core subjects.

3. Increase the evaluation time period from one academic year to two academic years.

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APPENDIXES

APPENDIX A

COVER LETTER AND QUESTIONNAIRE

TRAVIS MIDDLE SCHOOL
1500 S. 19th St.
TEMPLE, TEXAS 76504
(817)791-6187

July 12, 1996

Dear Teacher:

The following is a questionnaire for a graduate class I am attending this summer at Sam Houston State University. I am conducting a research study of low income students and their achievement levels compared to other students. The survey has been approved by Mrs. Howton. The data will be reported as grouped data, and the results will be posted on the bulletin board in the workroom. Please do not include your name on this survey. Please return the completed questionnaire to my box by 4:00p.m. today.

Thank you very much for your time in completing the questionnaire. Your input is a vital part of this study.

Sincerely,

Kim Kruse
Teacher
Travis Middle School

LOW INCOME STUDENTS ACHIEVEMENT COMPARED TO NON-LOW INCOME STUDENTS ACHIEVEMENT

DIRECTIONS: Please circle one answer for each question.

---

1. Your current age:.....22-35 36-50 over 50
2. Current marital status:.....married single other
3. What is your sex?.....male female
4. How many years have you been teaching?.....1-3 4-10 over 10
5. What grade do primarily teach?.....6th 7th 8th
6. What subject do you primarily teach?.....math/science English history elective
7. What percent of your students come from low income families?....0%-25% 26%-50% 51%-75% 76%-100%

DIRECTIONS: Please circle one answer for each question. Low represents low income students, and non-low represents non-low income students in your classes.

---

8. Which group of students' parents attend more parent conferences?.....low non-low
9. Which group of students has a higher percent of parents attending more PTA meetings.....low non-low
10. Which group of students contain a higher percent of special education students?.....low non-low
11. Which group of students need more one-on-one assistance?.....low non-low
12. Which group of students has a higher rate of turning in their homework?.....low non-low
13. Which group has a higher rate of completing class assignments?..low non-low
14. Which group of students exhibits more creativity?.....low non-low
15. Which group of students is easier to motivate?.....low non-low
16. Which group of students is absent from school more often?.....low non-low
17. Which group of students has a higher achievement level?.....low non-low

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APPENDIX B

RAW DATA

TABLE 7. SIXTH GRADE SCIENCE RAW DATA SCORES

	LOW-MID T	LOW-FINAL	NON-LOW-MID	NON-LOW-FIN
1	85	90	95	97
2	83	70	83	87
3	74	70	95	90
4	85	90	81	77
5	70	50	90	95
6	89	92	95	90
7	93	90	90	95
8	50	70	93	98
9	85	70	70	82
10	75	50	85	87
11	90	95	88	90
12	70	69	80	90
13	60	50	70	75
14	78	81	95	98
15	93	85	81	77
16	80	83	95	91
17	85	80	75	86
18	75	70	95	93
19	76	70	97	98
20	87	90	92	80
21	90	92	95	97
22	86	78	95	92
23	97	94	82	80
24	79	65	76	81
25	85	70	87	90
26	70	50	70	76
27	50	50	88	94
28	98	95	90	88
29	89	85	87	82
30	75	68		
31	77	82		
32	89	90		
33	67	70		
34	82	84		
35	85	86		
36	92	89		
37	70	73		

APPENDIX C

OTHER TABLES

Table 3. Low Income Students Mid-term Mean

Data File: 6TH GR SCI ACHIEVEMENT STUDY

Variable: LOW-MID T Observations: 37

Minimum: 50.00	Maximum: 98.00
Range: 48.00	Median: 83.00
Mean: 80.11	Standard Error: 1.88
Variance:	130.43
Standard Deviation:	11.42
Coefficient of Variation:	14.26
Skewness: -0.87	Kurtosis: 0.47

Table 4. Non-low Income Students Mid-term Mean

Data File: 6TH GR SCI ACHIEVEMENT STUDY
Variable: NON-LOW-MID Observations: 29

Minimum:	70.00	Maximum:	97.00
Range:	27.00	Median:	88.00
Mean:	86.72	Standard Error:	1.57
Variance:		71.35	
Standard Deviation:		8.45	
Coefficient of Variation:		9.74	
Skewness:	-0.66	Kurtosis:	-0.81

Table 5. Low Income Students Final Mean

Data File: 6TH GR SCI ACHIEVEMENT STUDY
Variable: LOW-FINAL Observations: 37

Minimum: 50.00	Maximum: 95.00
Range: 45.00	Median: 80.00
Mean: 76.70	Standard Error: 2.31
Variance:	197.21
Standard Deviation:	14.04
Coefficient of Variation:	18.31
Skewness: -0.57	Kurtosis: -0.76

Table 6. Non-low Income Students Final Mean

Data File: 6TH GR SCI ACHIEVEMENT STUDY
Variable: NON-LOW-FIN Observations: 29

Minimum: 75.00	Maximum: 98.00
Range: 23.00	Median: 90.00
Mean: 88.17	Standard Error: 1.34
Variance:	52.29
Standard Deviation:	7.23
Coefficient of Variation:	8.20
Skewness: -0.31	Kurtosis: -1.19